

## Protecting Precious Water Resources

After a hurricane in the 1960s caused salt water from the Atlantic Ocean to seep into private wells—effectively destroying the drinking water—Kill Devil Hills in Dare County, N.C., took action. Today, four water treatment facilities provide safe, clean and healthy fresh water for residents and tourists.

Two technologies currently are used by Dare County for the treatment of water. The first is a conventional ion exchange method that softens well water. The second is a reverse osmosis (RO) procedure that desalts brackish groundwater from wells drilled down 300 to 400 feet.

Established in 1988 and finished a year later, the desalinization plant in Kill Devil Hills uses an RO system designed and operated for efficiency and reliability. The system is composed of a series of wells and pumps, a pre-treatment area, an RO area, a post-treatment area, a water

discharge system, a control room and an elevated storage tank.

### Maintaining Water Levels


Maintaining adequate levels of water is the key to this project. The system must maintain adequate levels of water to maintain system pressure. Kill Devil Hills needed an instrument that controlled the opening and closing of an electric valve depending on the water system pressure at the base of the water tower. "We also wanted the operator in the control room to be continuously aware of the water tank level," said Ken Flatt, plant electrician at the Kill Devil Hills facility.

Flatt and his colleagues chose the One Series electronic pressure switch from United Electric Controls, a Massachusetts-based company specializing in threshold detection switches.

This switch plays the part of three separate devices, a pressure switch, a

pressure gauge and a pressure transmitter/transducer. It continuously monitors and communicates its own health status, assuring proper function and providing reliable transmitter performance at a price that's close to the cost of a single pressure switch.

Flatt particularly likes the 4-20 output of the device. "It provides me with local control capabilities, while the pressure also can be remotely monitored," he said.

At Kill Devil Hills, the 4-20 output is connected to a Modicon Momentum remote telemetry Programmable Logic Controller (PLC). It sends a signal to the control room at the RO plant informing the operator of the current tank level. Based on the tank level signals, the PLC in the control room then turns the pump on and off, assuring a continuous and uninterrupted water supply. 

For more information on this subject, circle 863 on the reader service card.